BCM Rls 6.0

BCM Monitor

Task Based Guide

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BCM Monitor

Overview

The BCM Monitor allows you to see the current status of various parts of your system services. You can use this tool during troubleshooting to confirm current configurations, including CallPilot applications and IP trunk information.

BCM Monitor is a stand-alone diagnostic tool that allows the user to view basic information about their BCM system and to monitor certain real time parameters of the system.

Real time monitoring capabilities include:

- Overall system status
- IP telephony functions of the BCM system
- Utilisation of resources on the Media Card (CSC or BMB)
- Operation of telephony applications (e.g. Voice Mail, Contact Centre, etc.)
- Line monitoring; line numbers, digits dialled, originating extensions, duration etc.
- BCM Monitor can be used from a remote PC that has IP connectivity to the monitored BCM system.
- Multiple instances of the BCM Monitor application can be used on a single PC to monitor several remote BCM systems at the same time.

Required Information

Before commencing installation and usage of BCM Monitor, it would be useful to obtain the following information:

- The Business Communications Manager IP Address, User ID, & Password.

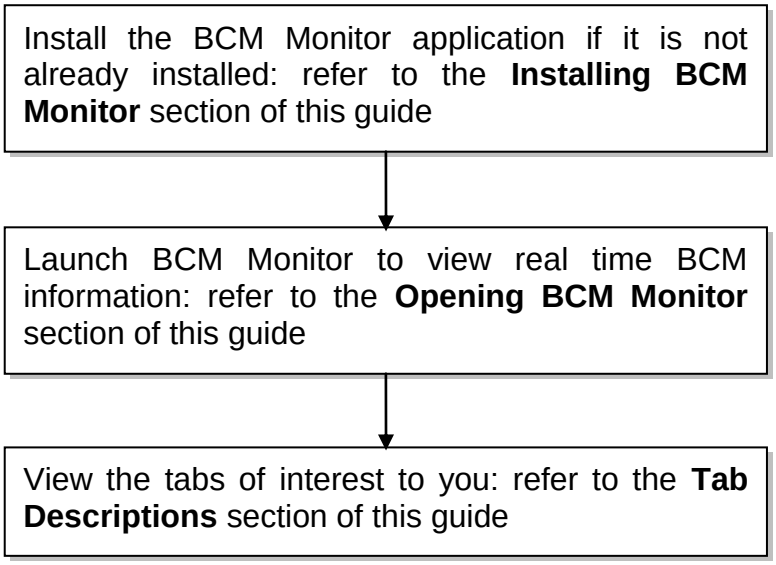
Supported Operating Systems

This version of BCM Monitor is supported on the following operating systems:

- Windows XP Professional SP3
- Windows Vista Business, Ultimate, Enterprise
- Windows 7 Professional, Ultimate, Enterprise
- Citrix

Flowchart

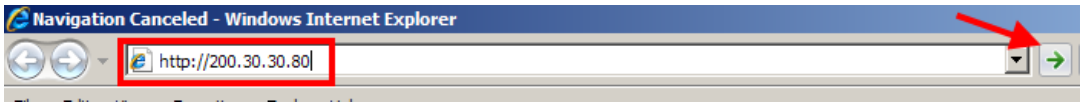
Use the flow chart below to determine which sections of the guide to use.


Install the BCM Monitor application if it is not already installed: refer to the **Installing BCM Monitor** section of this guide
Launch BCM Monitor to view real time BCM information: refer to the **Opening BCM Monitor** section of this guide
View the tabs of interest to you: refer to the **Tab Descriptions** section of this guide

Installing BCM Monitor

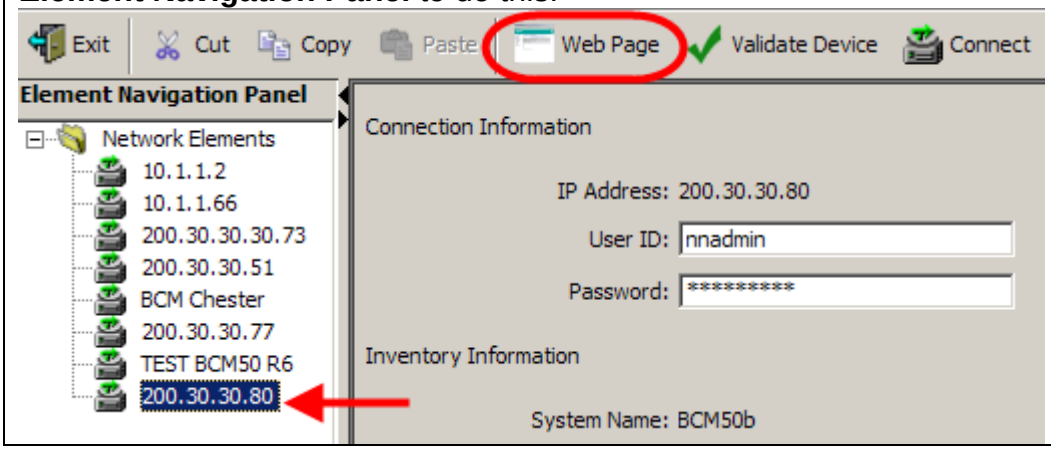
Note: BCM Monitor may have been installed on your PC if you have installed Element Manager. If BCM Monitor is installed on your PC, omit this section.

1. Open Internet Explorer.In the address field type (replacing the relevant part with your BCM IP address): **http://<bcm ip address>/**

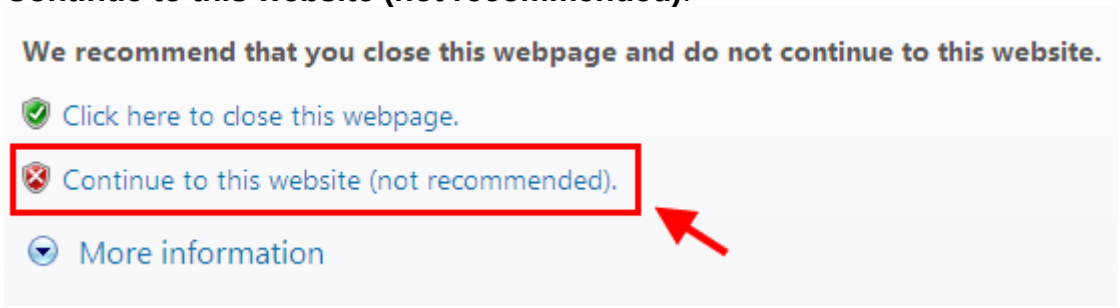


2. Click on **Go**, or press **Return** on your keyboard.

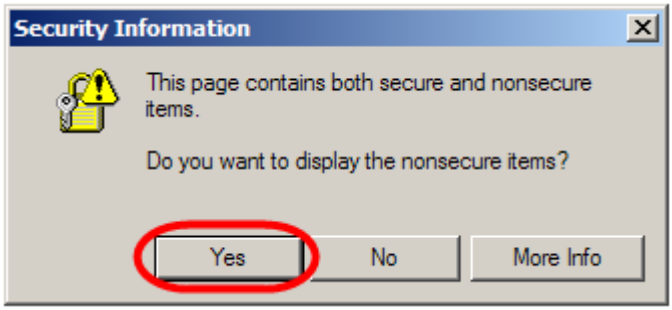
Note: You can also use the **Web Page** button in Element Manager to launch a web broswer session. The BCM you wish to access must be selected in the **Element Navigation Panel** to do this.



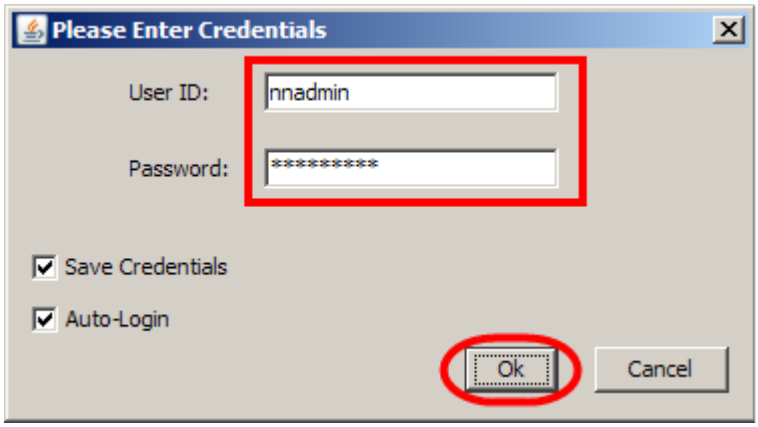
3. If you are presented with the **Certificate Error** window, click on **Continue to this website (not recommended)**.


We recommend that you close this webpage and do not continue to this website.
Click here to close this webpage.
Continue to this website (not recommended).
More information

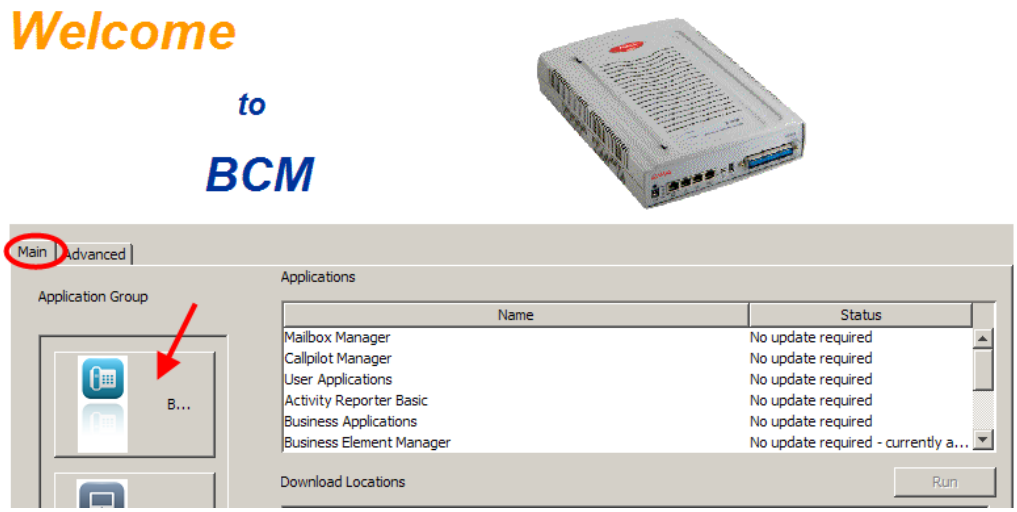
4. Accept any further security messages that you may get presented with.



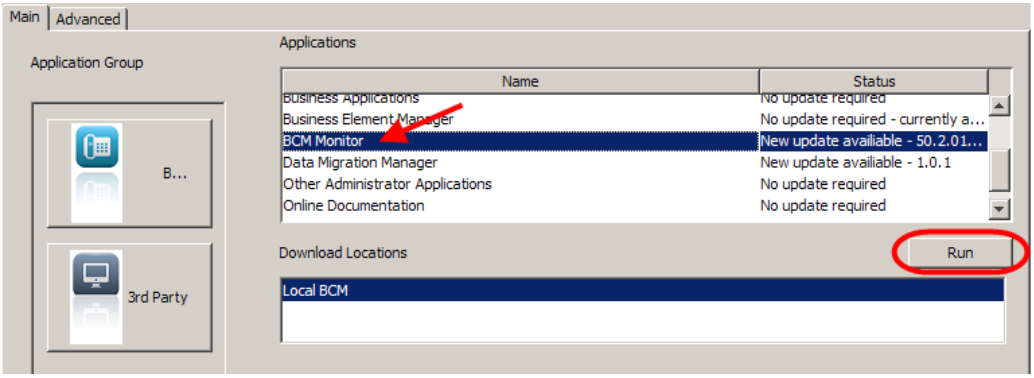
5. You will now see the login screen, enter your BCM User name and Password. By default these are set to User ID*:* **nnadmin** Password*:* **PlsChgMe!** Click on **OK.**



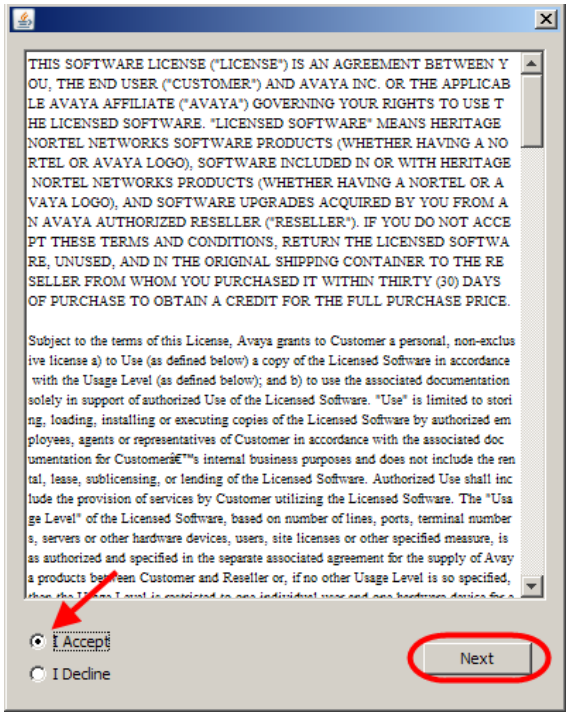
6. In the **Welcome to BCM** window, ensure the **Main** tab has been selected, and the **BCM** button clicked.



7. Select **BCM Monitor**, and click on **Run**.



8. Accept the licence agreement and click **Next**.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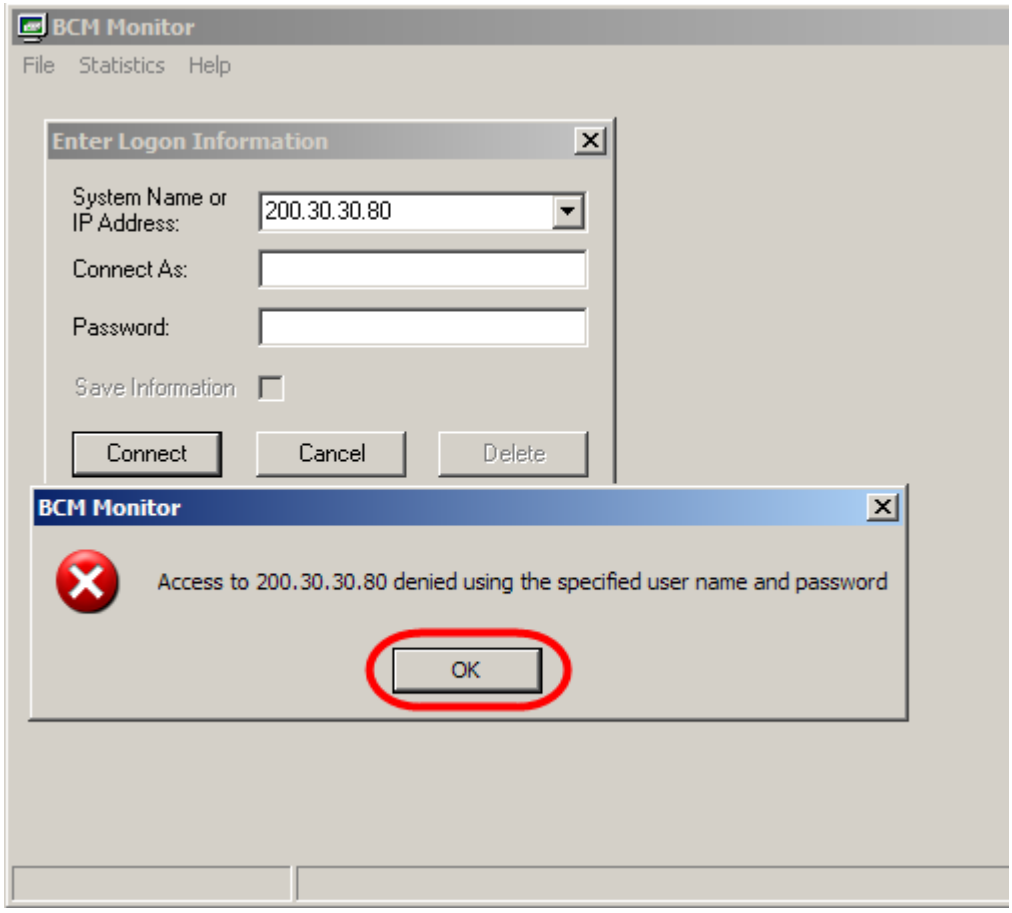
I Accept
I Decline
Next

9. BCM Monitor will be installed and launched, and will try to connect to the BCM from which it was installed. Click the **OK** button in the error window.

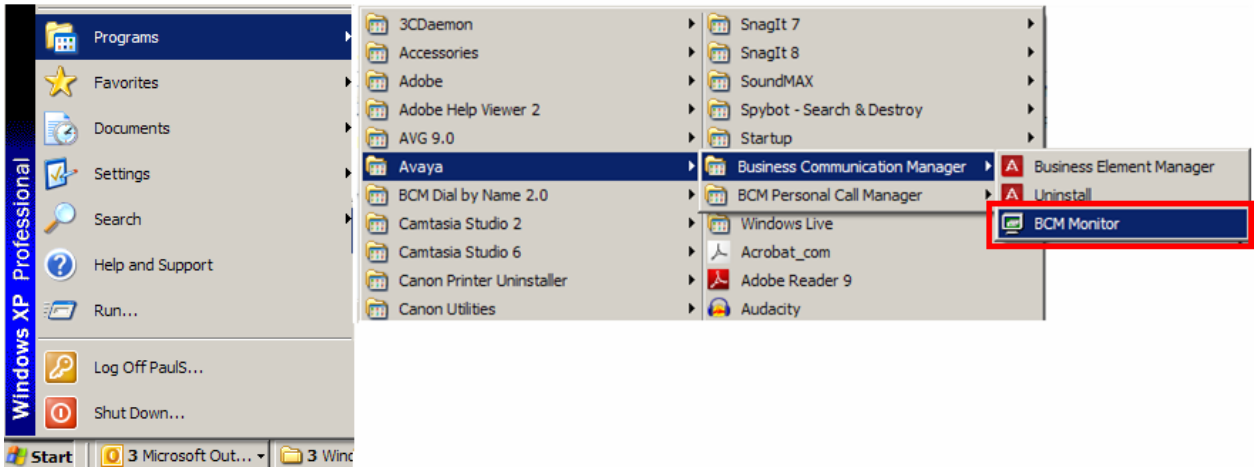


10. Close BCM Monitor and follow the procedure to launch the application in the **Opening BCM Monitor** section of this guide.

Opening BCM Monitor

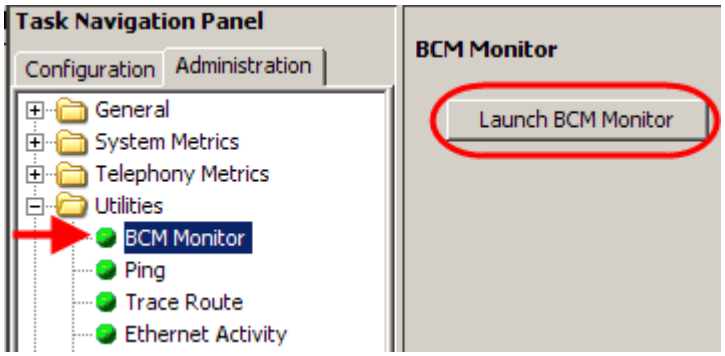
To launch BCM Monitor:

1. Select **Start**, **Programs**, **Avaya**, **Business Communications Manager**, **BCM Monitor**.

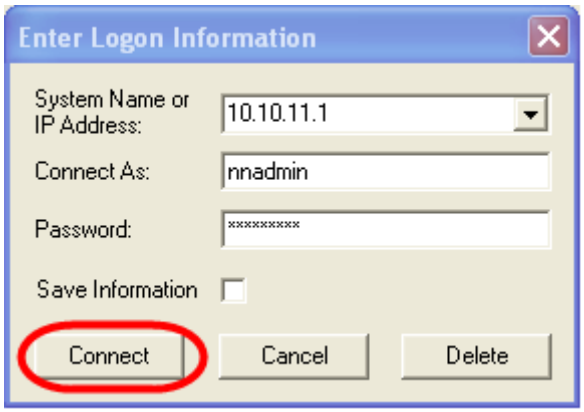


2. Alternatively BCM Monitor can be selected from your PC's Desktop by double clicking the shortcut icon.

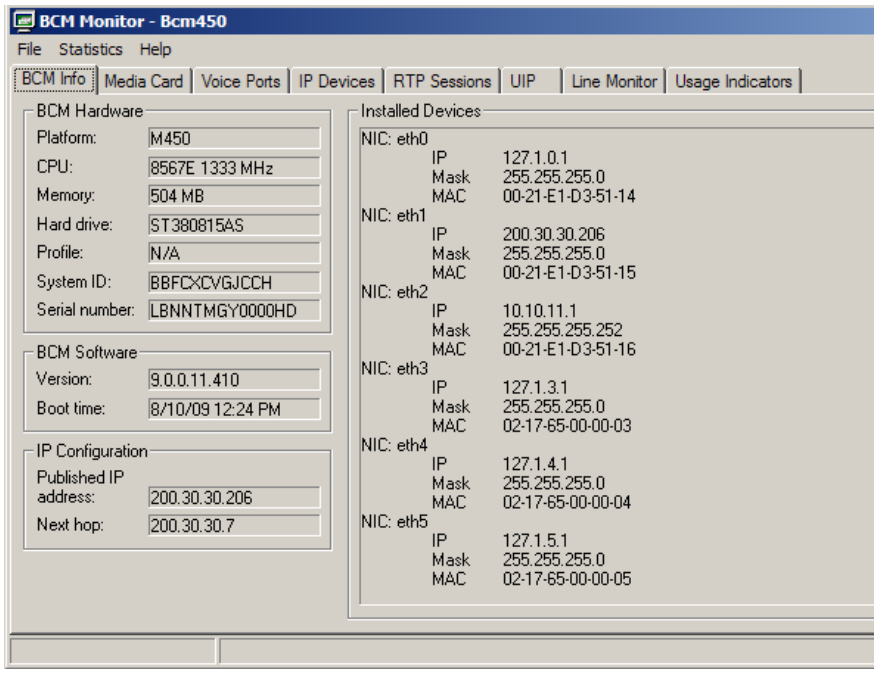
3. BCM Monitor can also be launched from within Element Manager. In the **Administration** tab, open the Utilities folder and select **BCM Monitor**. Click on the **Launch BCM Monitor** button.



4. The Enter Logon Information window appears. Enter the **IP Address** of the BCM, the **User Name** in the **Connect As** field, and Password. Click the **Connect** button.



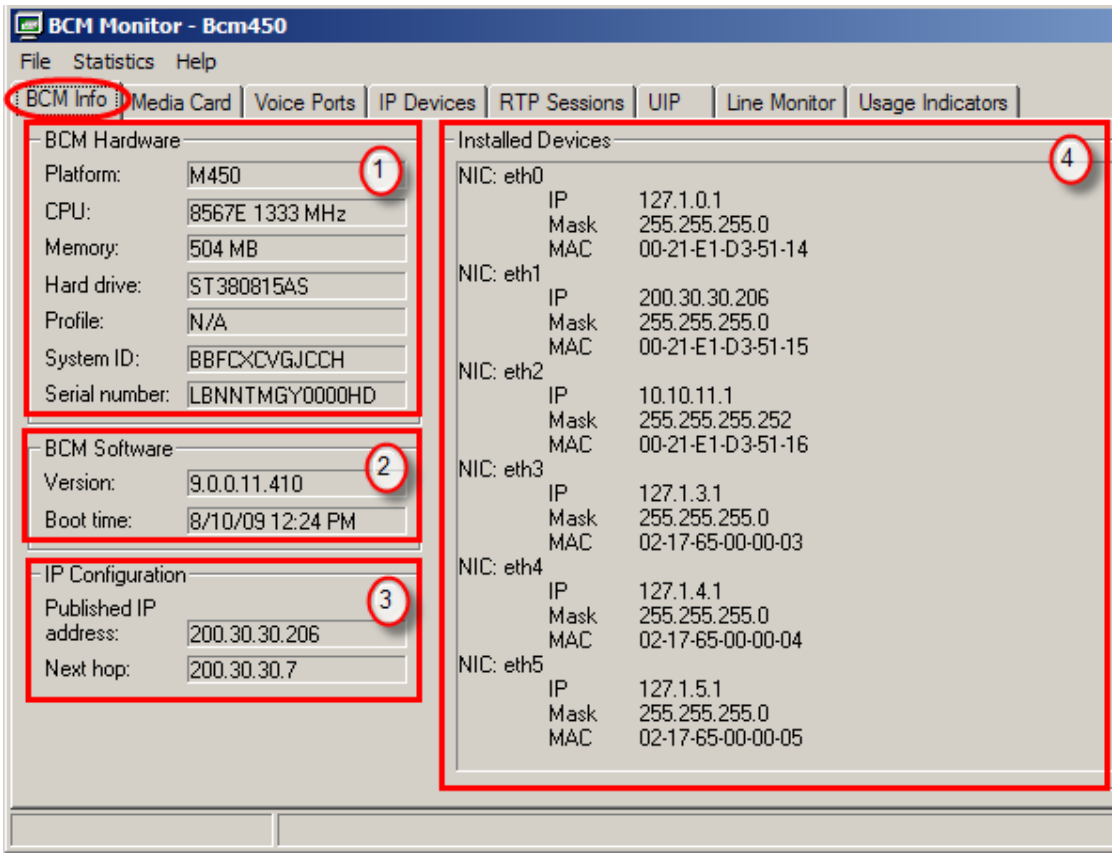
5. You will then be presented with the BCM Monitor's main screen.



Tab Descriptions

BCM Info Tab

BCM Info Tab displays the basic hardware and firmware information about your system.



1 **BCM Hardware:**
Platform: Information about the main system board used in the BCM system.
CPU: CPU type and speed.
Memory: Size of installed system memory.
Hard drive: Primary hard drive's size.
Profile: Hardware profile of the BCM system (i.e. the configuration of installed PCI devices).
System ID: Unique system ID (used for licensing).
Serial number: Serial number of the BCM system.

2 **BCM Software:**
The BCM Software section contains information about the BCM software installed on the monitored BCM system.
Version: Version of the currently installed BCM software.
Boot time: Date and time when the BCM system has been last booted (the information is based on the local time of the BCM system).

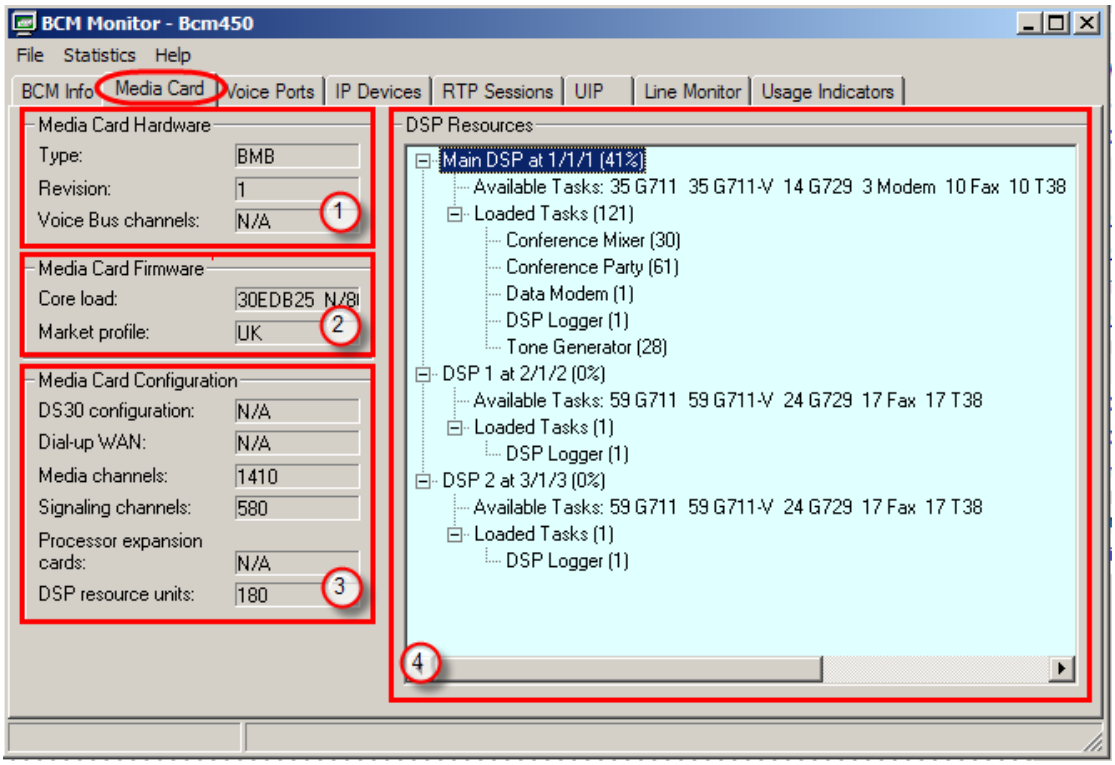
3 **Configuration:**
The IP Configuration section contains basic information about IP parameters of the monitored BCM system.
Published IP address: IP address which is used by BCM's Voice over IP software components for external communications over LAN and/or WAN. Other IP devices on the network (e.g. IP sets) use this address to communicate with the BCM system.
Next hop: Next hop router. Typically, this is the first router on the primary network connection.

4 **Installed Devices:**
The Installed Devices section contains additional information about hardware devices installed in the monitored BCM system.

Note: When troubleshooting IP connectivity problems, you should examine the Published IP Address (an incorrect address may prevent communication with external devices), the Next Hop Router (an incorrect setting may cause routing of IP packets to a wrong network adapter) and also IP addresses and subnet masks of installed network interface cards.

Media Card Tab

The **Media Card** tab provides information about the media card installed in the monitored BCM system.



1 **Media Card Hardware:**
The Media Card Hardware section contains the following.
Type: Type of the installed card.
Revision: Revision of the card.
Voice Bus channels: Number of media card voice bus channels (an internal bus that handles communication between the card and Processor Expansion Cards).

2 **Media Card Firmware:**
The Media Card Firmware section contains information about the firmware installed on the card. This firmware is responsible for all call processing on the BCM system.
Core load: Identification of the firmware load installed on the Media Card followed by its version and variant.
Market profile: Market profile (region) used for the initialisation of the BCM system.

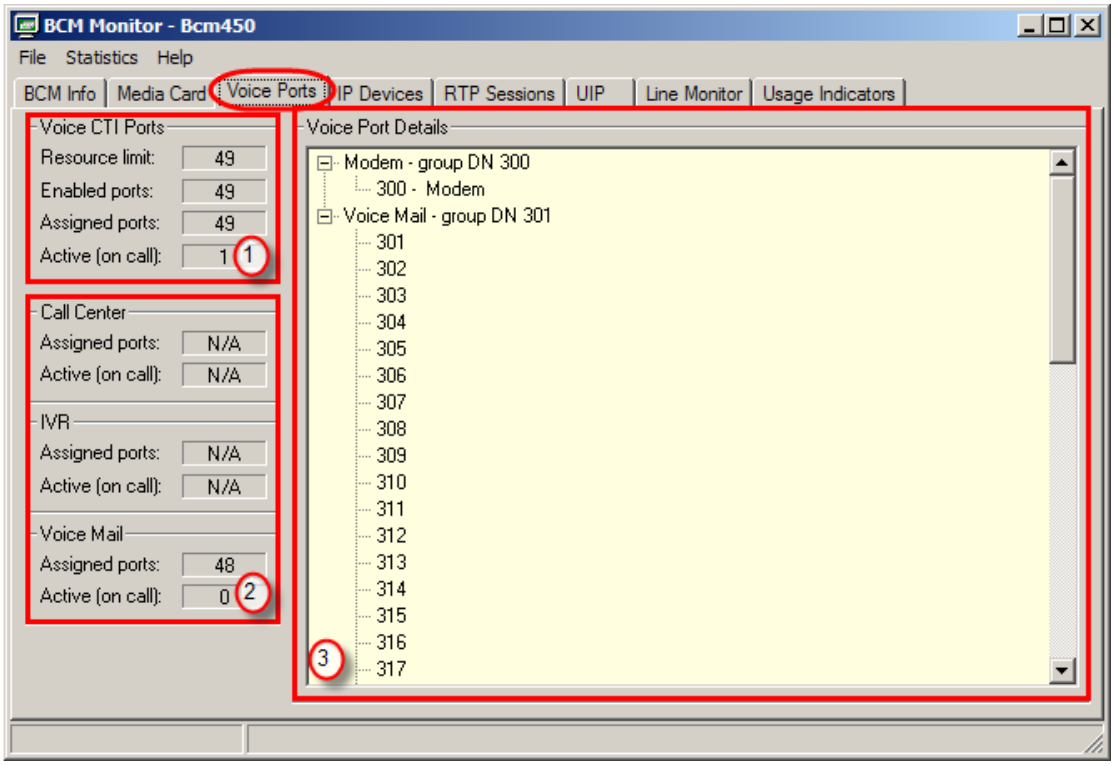
3 **Media Card Configuration:**
The Media Card Configuration section contains information about configurable parameters of the MSC.
DS30 configuration: For older model BCM's only (1000/200/400). Information on the DS30 channel configuration (6/2 or 5/3 split), and for Partial Double Density mode.
Dial-up WAN Information: For older model BCM's only (1000/200/400). If the Dial-up WAN is enabled or not. When dial-up WAN is enabled, resources available for other application are considerably reduced.
Media channels: Number of 64 kbps channels that can be used for transport of media (typically voice). Media channels are also known as B channels.
Signalling channels: Number of signalling channels that can be used by various devices (e.g., IP sets, voice ports). Signalling channels are also known as D channels.
Processor Expansion Cards: For older model BCM's only (1000/200/400). Number of installed Processor Expansion Cards.
DSP resource units: Total number of logical resource units provided by all installed Processor Expansion Cards.

4 **DSP Resources:**
The DSP Resources section contains detailed information about firmware tasks loaded on the Master DSP and Processor Expansion Cards.

Note: When troubleshooting voice path problems on IP devices, you should examine the percentage of used DSP resources in the DSP Resource control (see the percentage beside Processor Expansion Cards). If the DSP utilization is close to 100%, either additional Processor Expansion Cards should be installed or IP devices should be configured to use less expensive codecs (e.g., G729 instead of G723, or G711 instead of G729).

Voice Ports Tab

The **Voice Ports** tab provides information about configured voice ports (logical devices used for Voice Mail, Call Centre and IVR connections).



1 **Voice CTI Ports:**
The Voice CTI Ports section contains details about voice ports provided by the Voice CTI Service.
Resource limit: Maximum number of resources configured for Voice CTI ports.
Enabled ports: Number of booted Voice CTI ports.
Assigned ports: Number of Voice CTI ports assigned to a specific application type (Voice Mail, Call Centre or IVR).
Active (on call): Number of Voice CTI ports that are currently active.

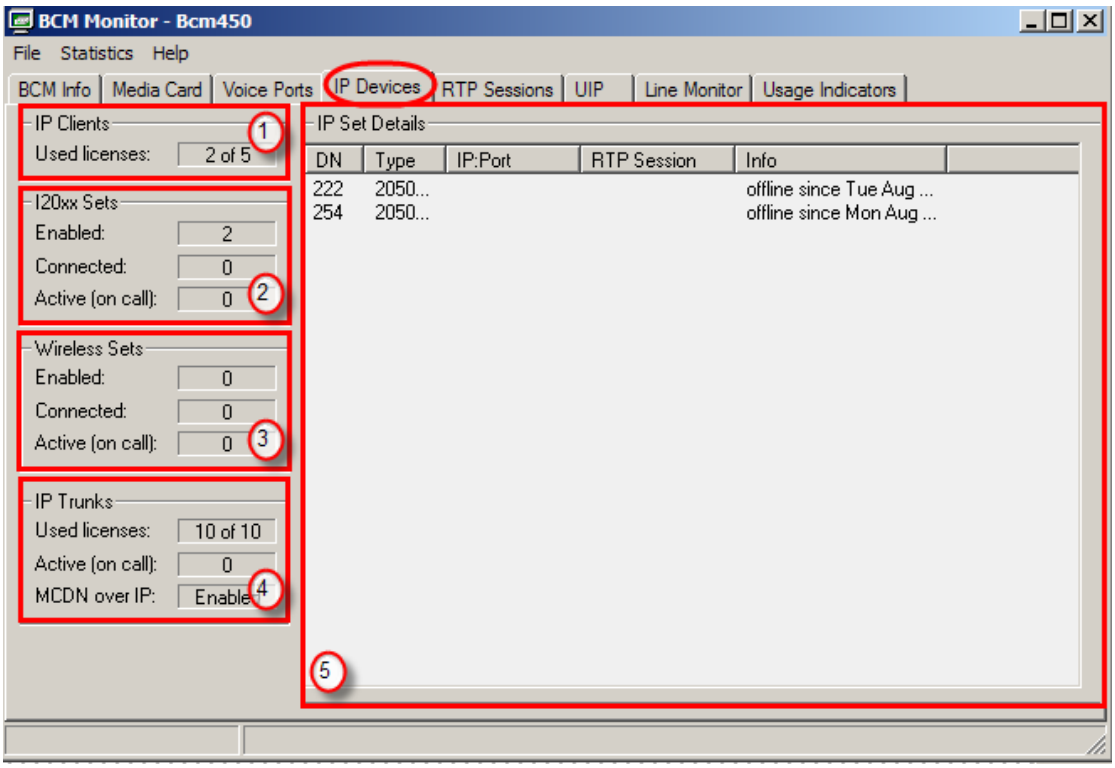
2 **Call Center, IVR, Voice Mail:**
These sections contain details about voice ports assigned to each specific application - Call Centre, IVR and Voice Mail.
Assigned ports: Number of Voice CTI ports assigned to the application.
Active (on call): Number of ports assigned to the application that are currently active.

3 **Voice Port Details:**
The Voice Port Details section contains information about activity on each enabled voice port.

Note: When troubleshooting problems with Voice Mail, Call Centre or IVR not answering calls, you should check if any voice ports assigned to the application(s) are currently available. If all voice ports are in use, the administrator should increase the number of configured voice ports

IP Devices Tab

The **IP Devices** tab provides information about IP sets and IP trunks.



1 **IP Clients:**
The IP Clients section contains information about the utilisation of IP Client licenses (i.e. licenses for IP sets).
Used licenses: Number of used licenses out of the total number of IP client licenses.

2 **i20xx Sets:**
The i20xx Sets section contains information about IP sets that use the UNISTIM protocol for communication with the BCM system.
Enabled: Number of booted UNISTIM IP sets.
Connected: Number of UNISTIM IP sets currently connected to the monitored BCM system. The number of connected sets is lower than the number of enabled sets when the “Keep alive” capability has been enabled for some IP sets and the sets are currently disconnected.
Active (on call): Number of UNISTIM IP sets that currently have an active RTP session (i.e. are involved in the transmission of voice data over the IP network).

3 **Wireless Sets:**
The Wireless Sets section contains information about wireless IP sets that communicate with the BCM system.
Enabled: Number of wireless IP sets registered with the BCM system.
Connected: Number of wireless IP sets currently connected to the BCM system.
Active (on call): Number of wireless IP sets that currently have an active RTP session (i.e. are involved in the transmission of voice data over the IP network).

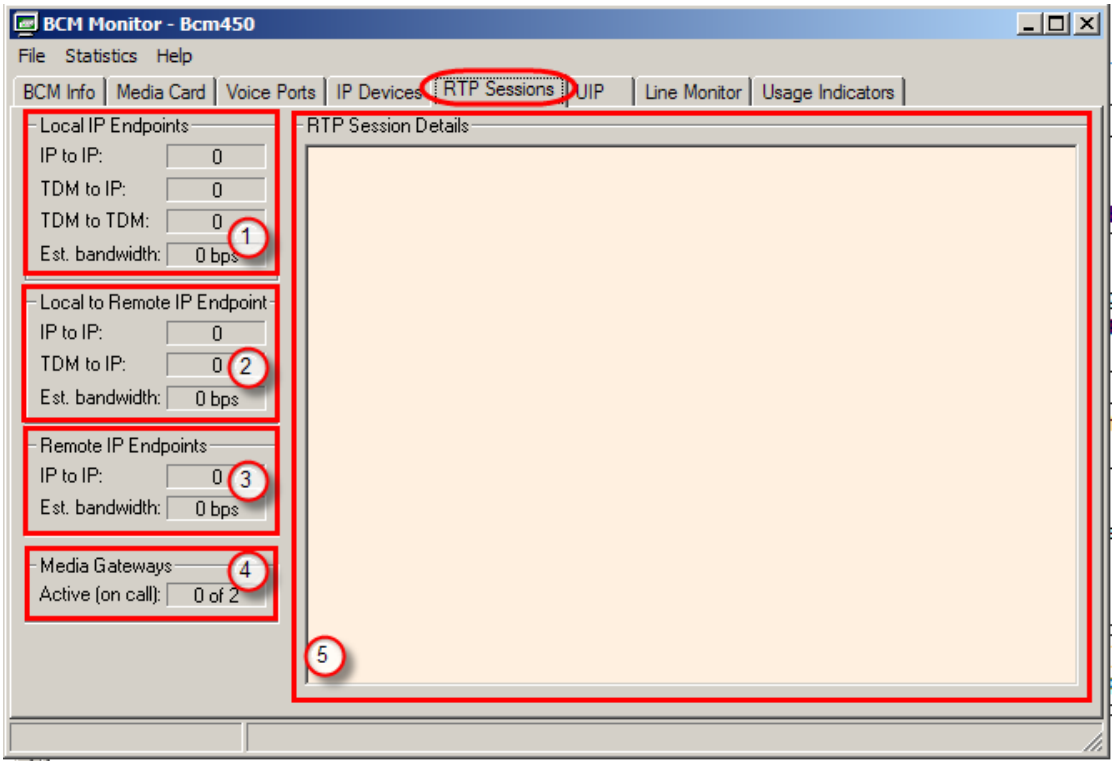
4 **IP Trunks:**
The IP Trunks section contains information about IP trunks enabled on the monitored BCM system.
Used licenses: Number of used licenses out of the total number of IP trunk licenses.
Active (on call): Number of IP trunks that are currently involved in a call with an active RTP session (i.e. the two endpoints of the IP trunk call are transmitting voice data over the IP network).
MCDN over IP: Information if the MCDN over IP feature is enabled or disabled.

5 **IP Set Details:**
The IP Set Details section contains information about all enabled IP sets and about activity on each of these sets.

Note: When troubleshooting problems with IP sets not being able to connect to a BCM system, you should check if any IP client licenses are currently available. If all IP client licenses are in use, the customer should either disable some of the IP sets or buy a key code to enable additional licenses.
You can sort information in the IP Set Details section by clicking on column headers. You can also rearrange columns by dragging them to the desired position.

RTP Sessions Tab

The **RTP Sessions** tab provides information about RTP (Real Time Protocol over UDP) sessions, which involve either the monitored BCM system or one of IP sets controlled by the monitored BCM system.



1 **Local IP Endpoints:**
The Local IP Endpoints section contains information about RTP sessions between local IP endpoints (i.e. endpoints that reside in local subnets of the monitored BCM system).
IP to IP: Number of RTP sessions between two local IP devices.
TDM to IP: Number of RTP sessions between a TDM device on the BCM system and a local IP device.
TDM to TDM: Number of RTP session between two TDM devices on the BCM system (TDM devices cross-connected over an IP trunk).
Est. Bandwidth: Estimated network traffic generated by RTP sessions between local IP devices or TDM devices and local IP devices. Only the BCM system itself and/or IP devices on local subnets are involved in these RTP sessions (i.e. no remote devices are involved). This traffic directly impacts the BCM system and its local subnet(s). Network connections to remote subnets are not impacted.

2 **Local to Remote IP Endpoint:**
The Local to Remote IP Endpoint section contains information about RTP sessions between a local IP endpoint (i.e. an endpoint that resides in local subnets of the monitored BCM system) and a remote IP endpoint (i.e. an endpoint that resides outside of local subnets of the monitored BCM system).
IP to IP: Number of RTP sessions between a local IP device and a remote IP device.
TDM to IP: Number of RTP sessions between a TDM device on the BCM system and a remote IP device.
Est. Bandwidth: Estimated network traffic generated by RTP sessions between TDM devices or local IP devices and remote IP endpoints. The BCM system itself and/or IP devices on local subnets are involved in these RTP sessions, which are routed to remote devices. This traffic directly impacts the BCM system and its local subnet(s) as well as network connections to remote subnets.

3 **Remote IP Endpoints:**
The Remote IP Endpoints section contains information about RTP sessions between remote IP endpoints (i.e. endpoints that reside outside of local subnets of the monitored BCM system).
IP to IP: Number of RTP sessions between remote IP devices.
Est. Bandwidth: Estimated network traffic generated by RTP sessions between remote IP endpoints. This traffic is generated on the route between the remote IP devices and typically does not impact the monitored BCM system.

4 **Media Gateways:**
The Media Gateways section contains information about allocated media gateways. A media gateway is a logical entity that combines a set of resources required for a single connection between a TDM device and an IP endpoint.
Active (on call): Number of media gateways that are currently involved in an active RTP session out of the number of allocated media gateways.

5 **RTP Session Details:**
The RTP Session Details section contains detailed information about active RTP sessions. For each active session, a single line is presented in the following format:
{IP Endpoint A}{IP Trunk X}<stream info>{IP Trunk Y}{IP Endpoint B} Codec FPP Details

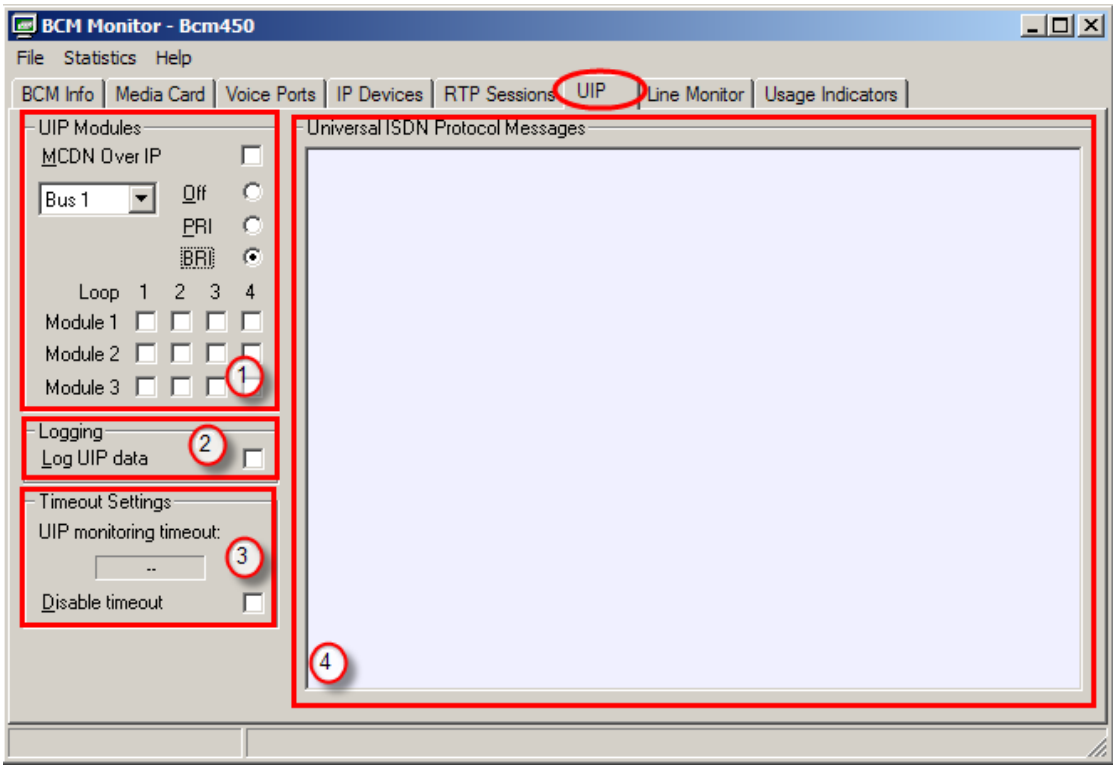
The IP Endpoint tokens contain all available information about each IP endpoint (type, DN, IP address, RTP port number). The IP Trunk tokens contain information about the IP Trunk used by each endpoint (if no trunk is used, the token is omitted). The stream info token shows which RTP streams are enabled between the two endpoints. The Codec token described the codec type used for the RTP session. The FPP shows the negotiated value of

"frames per packet". The Details token shows additional information about the RTP session.

BCM Monitor can display real time RTP session statistics for sessions that involve at least one media gateway. These real time statistics include information about the duration of the session, the number of bytes and packets received/sent per second and the total number of bytes and packets received/sent during the session. To display the RTP session real time statistics, double-click the line with the RTP session. To hide the real time statistics, double-click the line with the RTP session for the second time.

Universal ISDN Protocol Tab

The **Universal ISDN Protocol** (UIP) tab allows you to enable monitoring of UIP messages associated with IP trunks (MCDN messages) and PRI modules installed in the monitored BCM system.



1 **UIP Modules:**
The UIP modules section contains check boxes for all modules that can be selected for UIP monitoring.
MCDN over IP: Enables/disables monitoring of MCDN over IP messages for calls made over IP trunks.
PRI Module – Bus X: Enables/disables monitoring of UIP messages for calls made over trunks provided by a PRI module on the selected bus.
BRI Module – Bus X: Enables/disables monitoring of UIP messages for calls made over trunks provided by a BRI module on the selected bus.

2 **Logging:**
The Logging section allows you to enable logging of UIP messages.
Log UIP Data: Enables/disables logging of displayed UIP messages.

3 **Timeout Settings:**
UIP timeout: Display the amount of time after which monitoring of selected UIP modules will be disabled.
Disable timeout: Allows you to override the UIP monitoring timeout. Please use this option with caution.

4 **Universal ISDN Protocol Messages:**
The Universal ISDN Protocol Messages section displays a folder for each UIP module that has been enabled. Within each folder, the section displays up to 20 most recent UIP messages. UIP messages, which contain at least one information element (IE), can be expanded to show information elements. An IE, which contains data, can be expanded to show the content of the data portion of the IE.

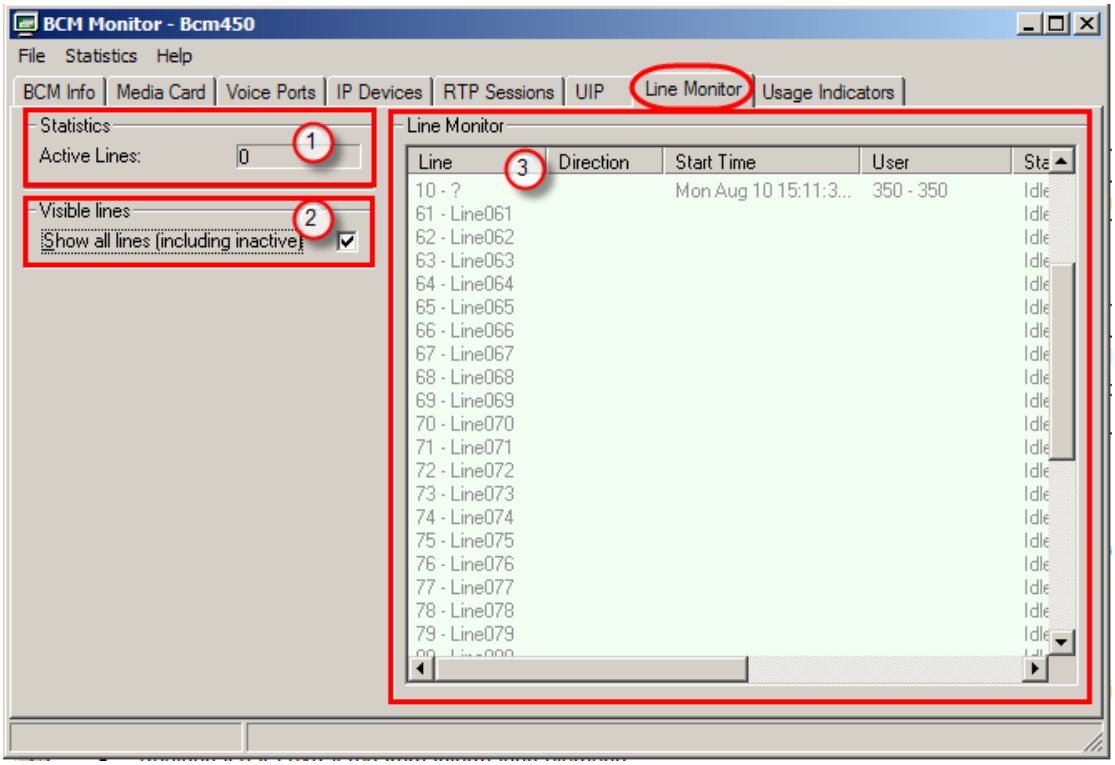
Each UIP message line contains the following information:

- The direction in relation to the BCM system ('>' for incoming, '<' for outgoing)
- The message type ('CC' for call control, 'MTC' for maintenance)
- The direction in relation to the call reference origin ('> Cref origin' for incoming, '< Cref origin' for outgoing)
- The message name (or a hexadecimal value if the name is unknown)
- Additional data extracted from information elements

Note: Monitoring of UIP messages on a busy system may have a certain impact on the performance of the BCM system or some peripherals connected to the BCM system. For example, when IP sets or voice ports make/receive a high number of calls over PRI trunks, monitoring of UIP messages increases the amount of generated signalling data and could increase the response time for IP sets and/or voice ports. For that reason, when monitoring a busy system, monitoring of only a single UIP module at a time is strongly recommended. Also, the monitoring time should be kept to minimum to limit the impact. When investigating intermittent problems, an extended monitoring period may be required. In such a case, use the Disable timeout check box in the Timeout Settings section and enable logging of UIP data. You must consider a potential impact on the system performance if the BCM system handles a high number of PRI calls.

Line Monitor

The **Line Monitor** tab provides real time information about the state of all the physical and voice over IP (VoIP) lines on the BCM.



1 **Statistics:**
The Statistics section contains details about the lines being monitored by the BCM Monitor.
Active Lines: Number of lines that are not in the idle state.

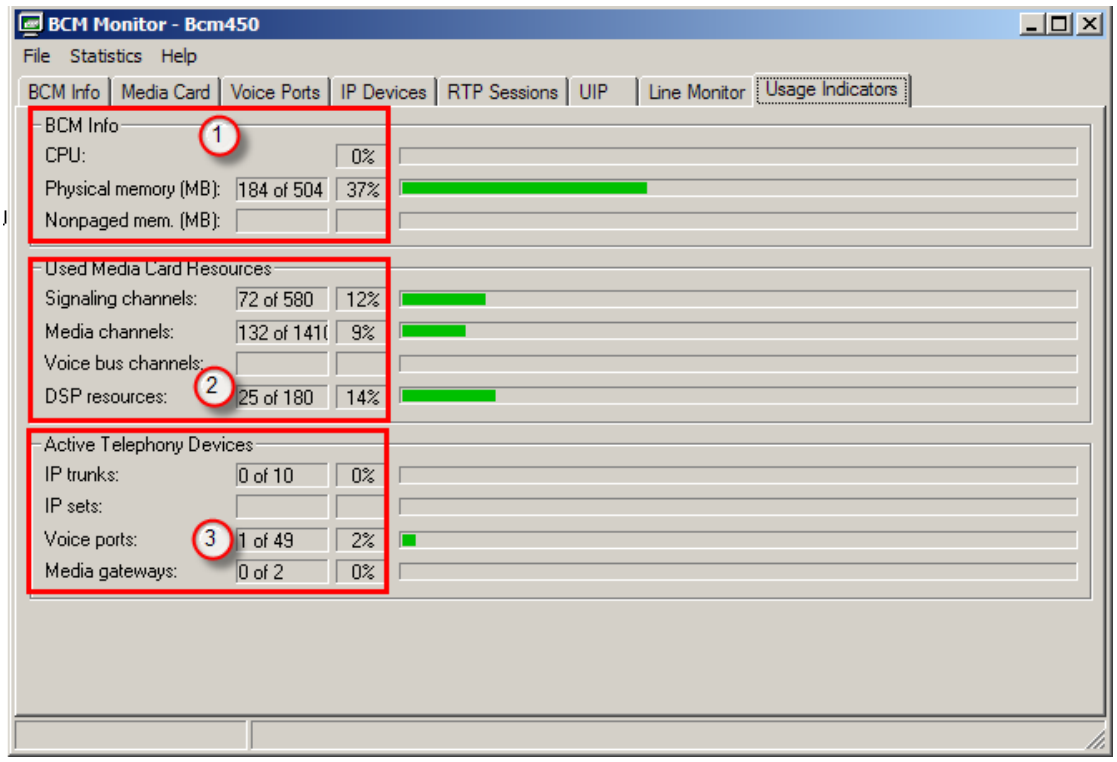
2 **Visible Lines:**
The Visible Lines section contains controls that enable the administrator to choose the lines that are displayed in the Line Monitor list.
Show All Lines (including inactive): When checked, the Line Monitor list will show the details about all the lines being monitored by the BCM Monitor. When unchecked, the Line Monitor list will only display details about the lines that have been used since the BCM was last rebooted.

3 **Line Monitor:**
This section shows the details about the BCM voice over IP (VoIP) and physical lines. Lines numbered from 1 to 60 are VoIP lines. Lines displayed in light grey represent lines that are idle. Blue lines represent lines that are active and finally, red lines represent lines that are on hold.
Line: Line number and line name.

Direction: Direction of the call present on the line Outgoing is shown when the call originates from the BCM outward and Incoming is shown when the call is originated from outside and directed at the BCM.
Start Time: BCM time and date at which the call started.
User: Shows the DN and Name of the BCM user that is involved in the call.
State: *Idle:* No active call on the line. *Dialing:* BCM user in the process of dialing the digits to place a call. The dialled digits appear in the Number and Name as the user dials. *Alerting:* A call has been received on the line and a BCM user's phone is ringing. *Connected:* The line has a connected call. *Held:* The line has a held call.
Number and Name: Number and name of the far-end used involved in the call.

Usage Indicators Tab

The **Usage Indicators** tab provides real time information about the BCM system, MSC Resources and certain types of telephony devices.


BCM Monitor - Bcm450
File Statistics Help
BCM Info Media Card Voice Ports IP Devices RTP Sessions UIP Line Monitor Usage Indicators
BCM Info
1
CPU: 0%
Physical memory (MB): 184 of 504 37%
Nonpaged mem. (MB):
Used Media Card Resources
Signaling channels: 72 of 580 12%
Media channels: 132 of 141(9%
Voice bus channels:
2
DSP resources: 25 of 180 14%
Active Telephony Devices
IP trunks: 0 of 10 0%
IP sets:
3
Voice ports: 1 of 49 2%
Media gateways: 0 of 2 0%

1 **BCM Info:**
The BCM Info section contains details about the BCM system's CPU and memory usage.
CPU: The current usage on the BCM system's main CPU.
Physical Memory: Physical memory in use (out of the total installed physical memory).
Non-paged Memory: Non-paged memory in use (out of the non-paged memory pool).

2 **Used Media Card Resources:**
The Used Media Card Resources section contains details about the Media Card's resource usage.
Signalling Channels: Current usage of Media Services Card's signalling channels.
Media Channels: Current usage of Media Services Card's media channels.
Voice Bus Channels: Current usage of Media Services Card's voice bus channels.
DSP Resources: Current usage of DSP resources provided by installed Processor Expansion Cards.

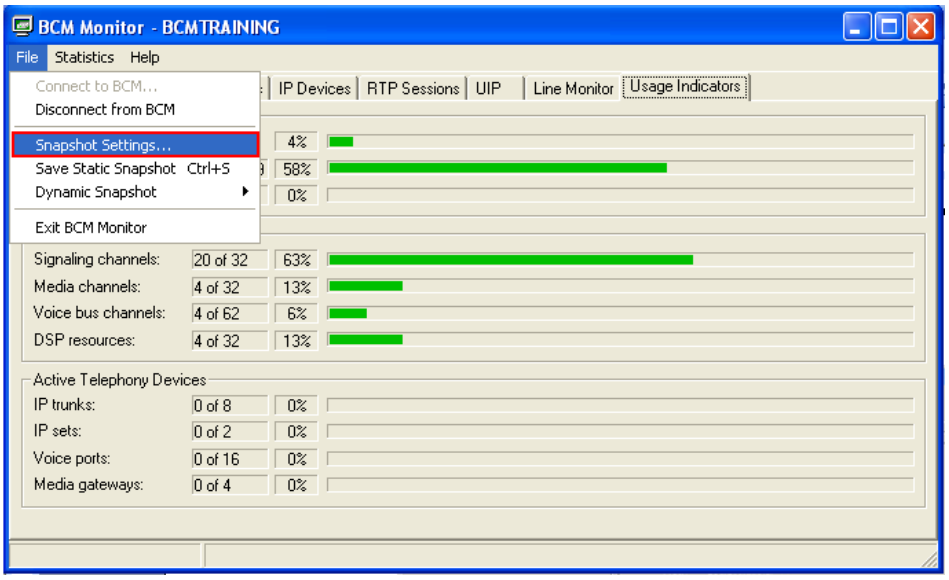
3 **Active Telephony Devices:**
The Active Telephony Devices section contains details about IP trunks, IP sets, voice ports and media gateways.
IP Trunks: Number of active IP trunks (out of the number of booted IP trunks).
IP Sets: Number of active IP sets (out of the number of booted IP sets).
Voice Ports: Number of active voice ports (out of the number of booted voice ports).
Media Gateways: Number of active media gateways (out of the currently allocated media gateways).

Note: Indicators are displayed in green when the usage appears to be normal. A yellow indicator signals a potential resource problem. Further investigation is recommended if an indicator remains yellow for an extended period of time. A red indicator signals a critical resource problem. Further investigation is recommended if an indicator remains red for more than a few seconds.

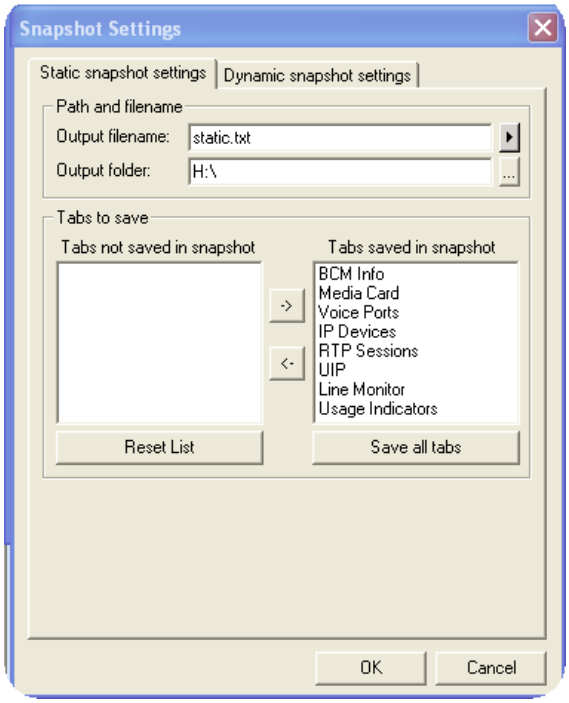
Static Snapshots

The static snapshot takes an instantaneous picture of the relevant BCM information displayed by the BCM Monitor and saves it to a file in a readable text format.

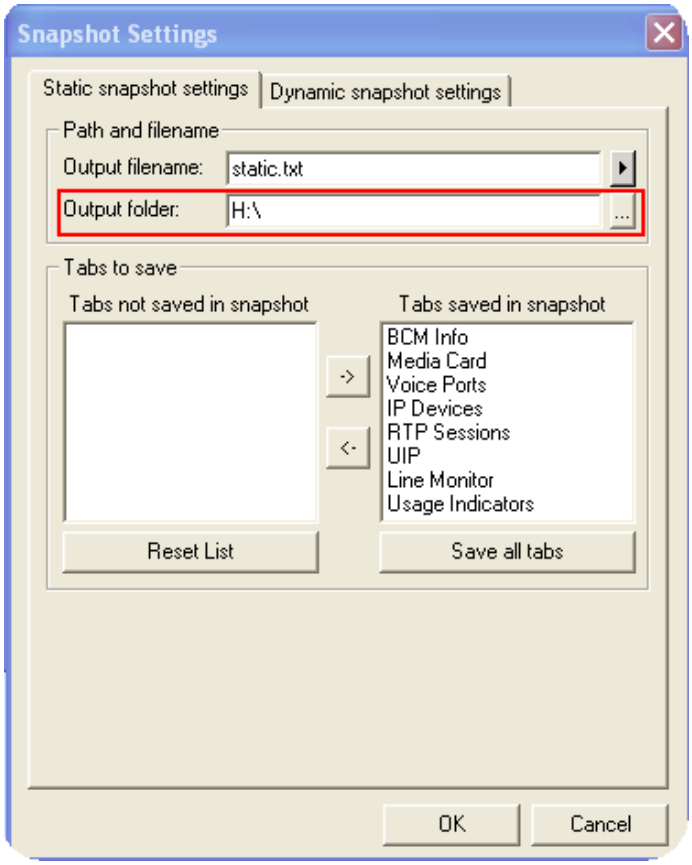
1. The snapshot settings can be set by selecting, **File** and **Snapshot Settings**.



2. The Snapshot Settings Window will be displayed.

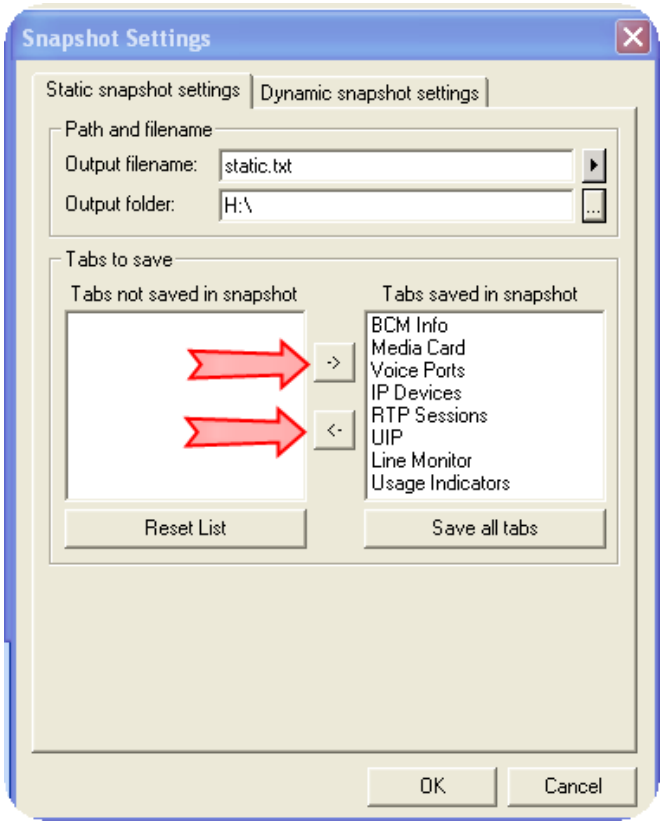


3. You can select a destination where the file will be saved by clicking the builder button next to the Output Folder.

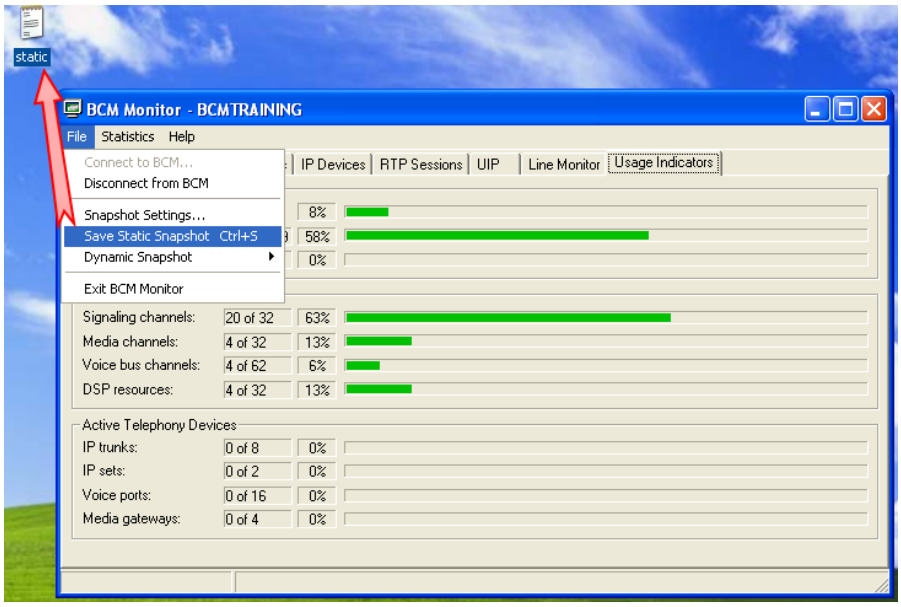


4. Once a destination has been selected click **OK**.

5. You can then select the information tabs that you wish to be saved by clicking the arrow keys in the centre of the window. By default all tabs are selected.

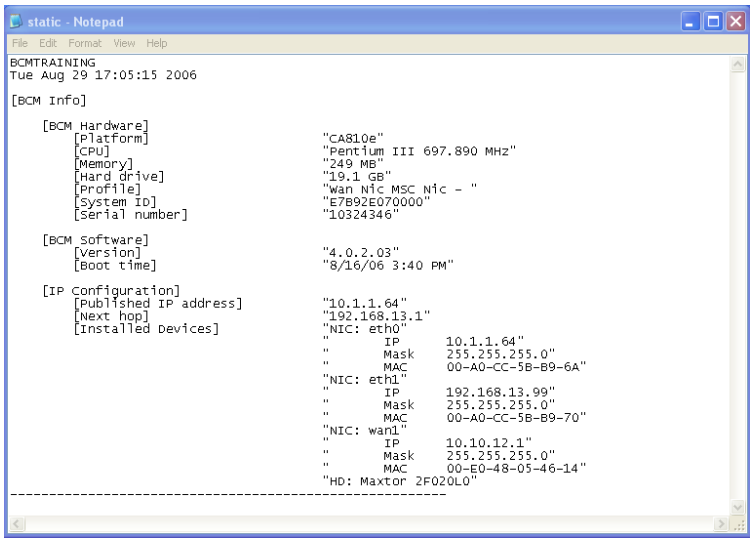


6. Once you have selected the tabs to be saved click **OK**.



7. Select **File, Save Static Snapshot** and the file will be saved in the location that you have specified.

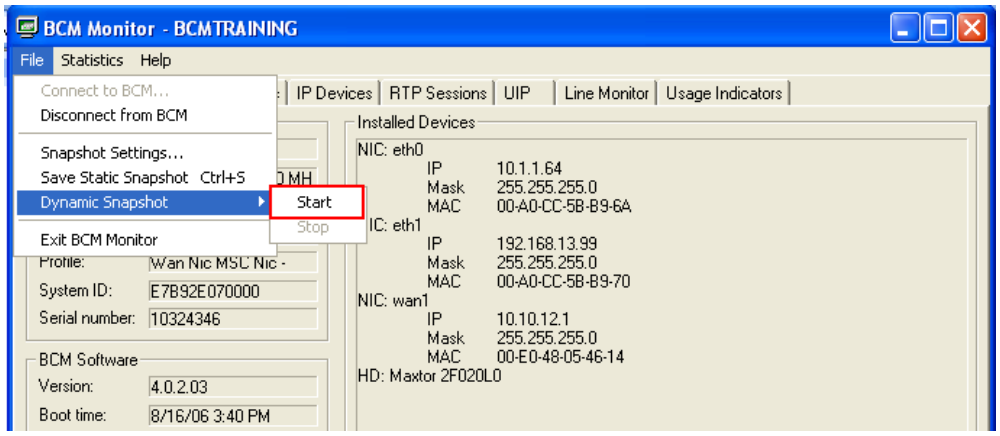
8. The static snapshot information will be displayed in text format.



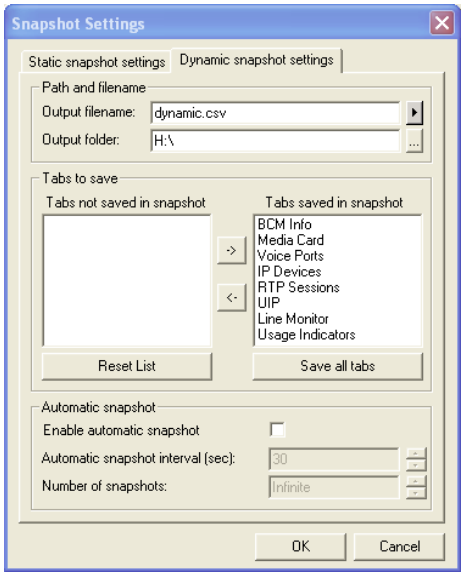
Dynamic Snapshots

The dynamic snapshot takes a succession of pictures of the BCM information that changes in time (such as CPU usage and active calls) and saves it to a file.

1. The dynamic snapshot feature can be activated by selecting **File, Dynamic Snapshot, Start** from the menu bar. Conversely, it can be de-activated by selecting **File, Dynamic Snapshot, Stop** from the menu.



2. The dynamic snapshots can be set by selecting **File**, **Snapshot settings** and selecting the **Dynamic snapshot settings** Tab.



3. The Snapshot Settings Window will be displayed.

4. The destination where the file will be saved can then be selected in the same manner as previously described.

Automatic Snapshot

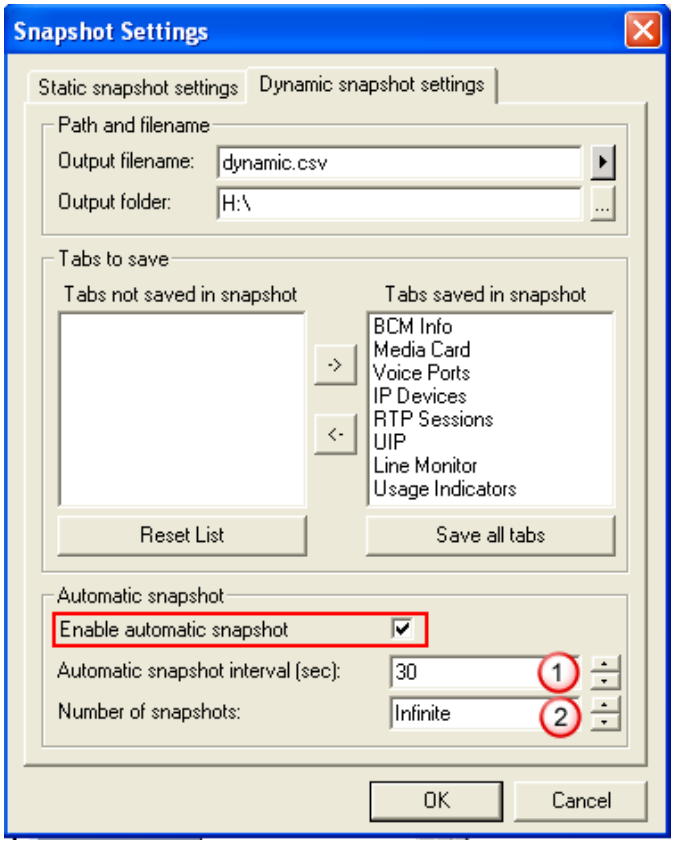
When enabled, the automatic snapshot tells the BCM Monitor application to take multiple pictures of the BCM Monitor dynamic information in a single dynamic snapshot file.

The number of pictures to take and the time interval between each picture is configurable.

The dynamic snapshot will stop by itself when all the pictures are taken or it can be stopped manually by selecting **Files, Dynamic Snapshot, Stop** from the menu.

When disabled, the file resulting from a dynamic snapshot will contain a single picture that represents the state of the dynamic information at the time the snapshot was taken.

The Automatic Snapshot can be enabled by ticking the **Enable Automatic Snapshot** box.

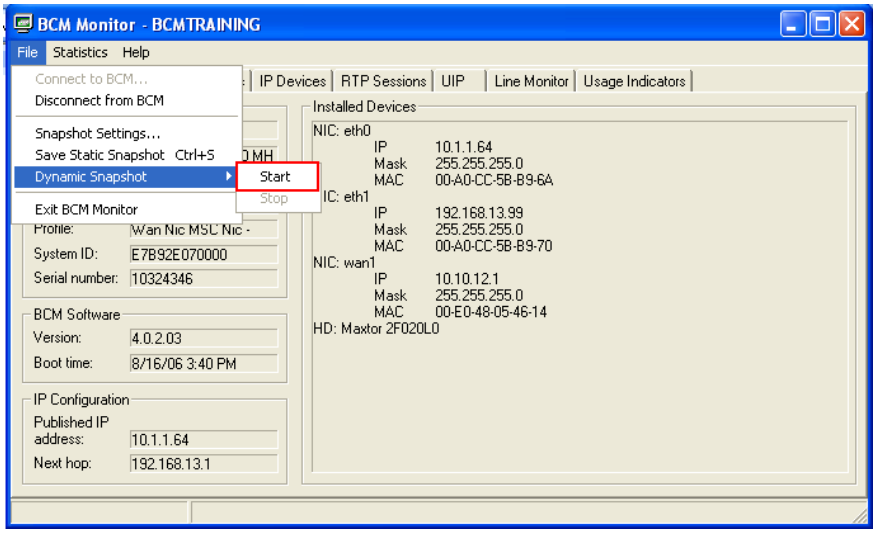


1 **Automatic snapshot interval - In seconds:**
Specifies the lapse of time that will separate successive pictures in the dynamic snapshot. This parameter is ignored when the automatic snapshot feature is disabled.

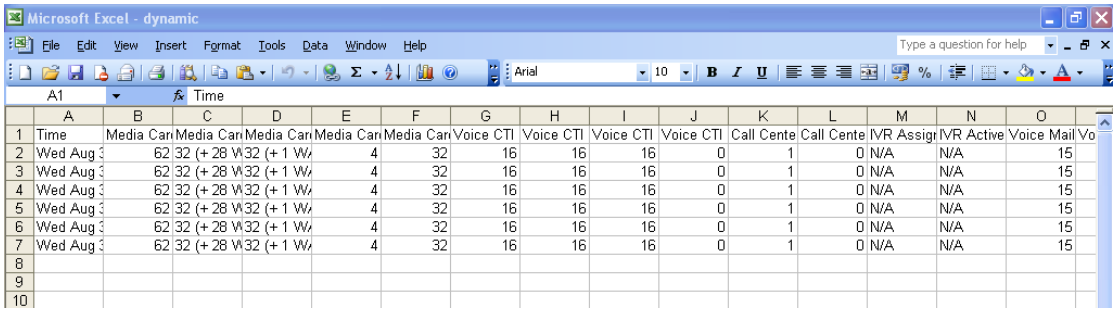
2 **Number of snapshots:**
Specifies the number of pictures that will be taken in a dynamic snapshot. The number can be selected by:

- Pressing the ‘up-down’ arrows to the right of the “Number of snapshot” edit field.
- To select an infinite number of snapshots, hold the ‘down’ arrow until the edit control reads ‘Infinite’. This parameter is ignored when the automatic snapshot feature is disabled.

1. The dynamic snapshot feature can be activated by selecting **File**, **Dynamic Snapshot**, **Start** from the menu bar.



2. The File will then be saved to the location you have specified in a CSV format covering the time interval you have defined.



3. Once in CSV format it is the possible to sort and filter as well as extract within the functionality of MS Excel format.

Avaya Documentation Links

- Administration & Security Guide